

Claims

1. A refrigerant pipe washing method when an air conditioner (1) that used a mineral-oil-based refrigerant oil is updated to or replaced with an air conditioner using an HFC refrigerant as the working refrigerant and the existing refrigerant piping (6, 7) is to be reused as is, wherein the residual refrigerant oil in the refrigerant piping is removed by washing the refrigerant piping using a cleaning agent comprising an HFC refrigerant containing at least 40 wt% of R32.

2. The refrigerant pipe washing method recited in claim 1, wherein the cleaning agent is in a wet state and the refrigerant piping (7) is washed by flushing it with the cleaning agent.

3. The refrigerant pipe washing method recited in claim 1 or 2, wherein the cleaning agent does not contain any R134a.

4. The refrigerant pipe washing method recited in any one of claims 1 to 3, wherein the cleaning agent contains only components that are contained in the working refrigerant that will be used when the air conditioner update is complete.

5. An air conditioner updating method, wherein at least a portion (2, 5) of the equipment constituting an existing air conditioner (1) is updated or replaced while the refrigerant piping (6, 7) of the existing air conditioner, i.e., the existing refrigerant piping, is reused as is, the method including the following steps:

a refrigerant recovery step (S1) in which the working refrigerant containing the existing refrigerant oil, i.e., a mineral-oil-based refrigerant oil, is recovered from the existing air conditioner;

an equipment updating step (S2) in which at least a portion of the equipment constituting the existing air conditioner is updated or replaced;

a refrigerant charging step (S3) in which the air conditioner with the equipment

replaced is charged with a working refrigerant comprising an HFC refrigerant containing at least 40 wt% of R32; and

a pipe washing step (S4) in which the working refrigerant charged in the refrigerant charging step is circulated, existing refrigerant oil remaining in the existing refrigerant piping is carried along with the working refrigerant, and the existing refrigerant oil is separated from the working refrigerant in order to remove it from the existing refrigerant piping.

6. The air conditioner updating method recited in claim 5, wherein during the pipe washing step (S4), the working refrigerant is circulated in such a manner that working refrigerant in a wet state flows through the existing refrigerant piping (7).

7. An air conditioner (101) that is obtained by updating or replacing at least a portion (2, 5) of the equipment of an existing air conditioner (1) and changing the working refrigerant to an HFC refrigerant, the air conditioner comprising the following:

existing refrigerant piping (6, 7) that was used with the existing air conditioner and contains residue of the existing refrigerant oil, i.e., a mineral-oil-based refrigerant oil;

a heat source unit (102) and a user unit (105) that are connected together by the existing refrigerant piping; and

an oil collecting device (127) that is configured such that after the working refrigerant has been changed and before the air conditioner is run in a normal operating mode, the oil collecting device can draw in working refrigerant that is being circulated through the air conditioner and separate the existing refrigerant oil that is carried with the working refrigerant,

the replaced working refrigerant is an HFC refrigerant containing at least 40 wt% of R32.